

Summary

Key Findings

KEY FINDINGS

The Survey of Education and Work is an annual collection, which was most recently conducted throughout Australia in May 2018 as a supplement to the monthly Labour Force Survey.

Of Australians aged 20 to 64 years:

- 9.8 million, or 66.7% had attained a non-school qualification.
- Of those without a non-school qualification, more than half (52.7%) had a Year 12 or equivalent qualification.
- Almost three-quarters (71.4%) of those who were employed had a non-school qualification.
- 31.4% had a Bachelor Degree or above.

Of Australians aged 15 to 64 years:

- Almost one-fifth of Australians (19.0%) were currently studying.
- Of those who were currently studying for a non-school qualification, 41.6% were completing a bachelor degree, 13.5% were doing post-graduate degrees, and 12.8% were studying for a Certificate III.
- The most popular field of study for a non-school qualification was society and culture (22.0%), followed by management and commerce (20.5%) and health (14.9%).
- Of apprentices and trainees, 84.0% were male compared with 16.0% female.

Of Australians aged 15 to 24 years:

- 81.1% were fully engaged in employment or education and 9.9% were partially engaged.

Key Indicators, Education and Work, Australia, 2008 and 2018

Indicator	2008	Year 2018	Change between 2008 and 2018
Attainment of non-school qualifications, persons aged 20 to 64 years			
Persons with a non-school qualification	59.2%	66.7%	7.5pts
Male	61.1%	66.4%	5.3pts
Female	57.4%	67.1%	9.7pts
Persons with a non-school qualification by Labour Force Status			
Employed	64.0%	71.4%	7.4pts
Unemployed	48.8%	58.0%	9.2pts
Not in the Labour Force	42.2%	49.9%	7.7pts
Level of highest non-school qualification attained			
Certificate III or above ^(a)	51.9%	62.3%	10.4pts
Bachelor Degree or above ^(a)	24.4%	31.4%	7.0pts
Participation in formal study, persons aged 15 to 64 years			
Persons in formal study	17.8%	19.0%	1.2pts
Male	17.6%	17.7%	^(d) 0.1pts
Female	18.0%	20.2%	2.2pts
Engagement in employment and education^{(b)(c)}, persons aged 15 to 24 years			
Fully engaged	83.7%	81.1%	-2.6pts
Partially engaged	7.7%	9.9%	2.2pts
Not engaged	8.7%	9.0%	^(d) 0.3pts

(a) Proportion of total population aged 20 to 64 years.
 (b) See the Key Concepts page for more information on how Engagement in employment and education is defined.
 (c) Including persons participating in school education
 (d) The difference between periods was not statistically significant. See the Significance Testing article in this publication for more information:
<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6227.0.55.002>
Note: Data has been randomly adjusted to avoid the release of confidential data. Discrepancies may occur between sums of the component items and totals.

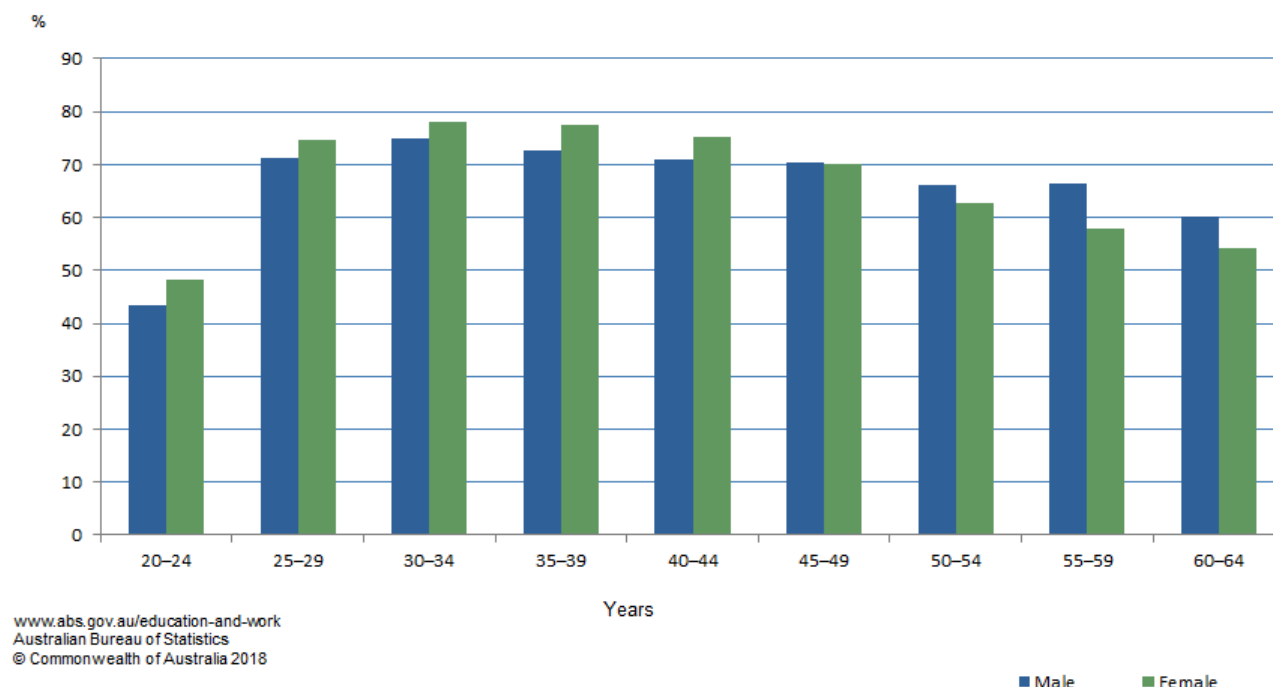
Summary of Findings

SUMMARY OF FINDINGS

ATTAINMENT OF NON-SCHOOL QUALIFICATIONS

In May 2018, over two-thirds (66.7%) of Australians, or 9.8 million people aged 20 to 64 years had attained at least one non-school qualification. In the younger age groups, larger proportions of females had non-school qualifications compared with males. However, in the older age groups, a larger proportion of males than females had attained a non-school qualification. (Table 24 and Graph 1)

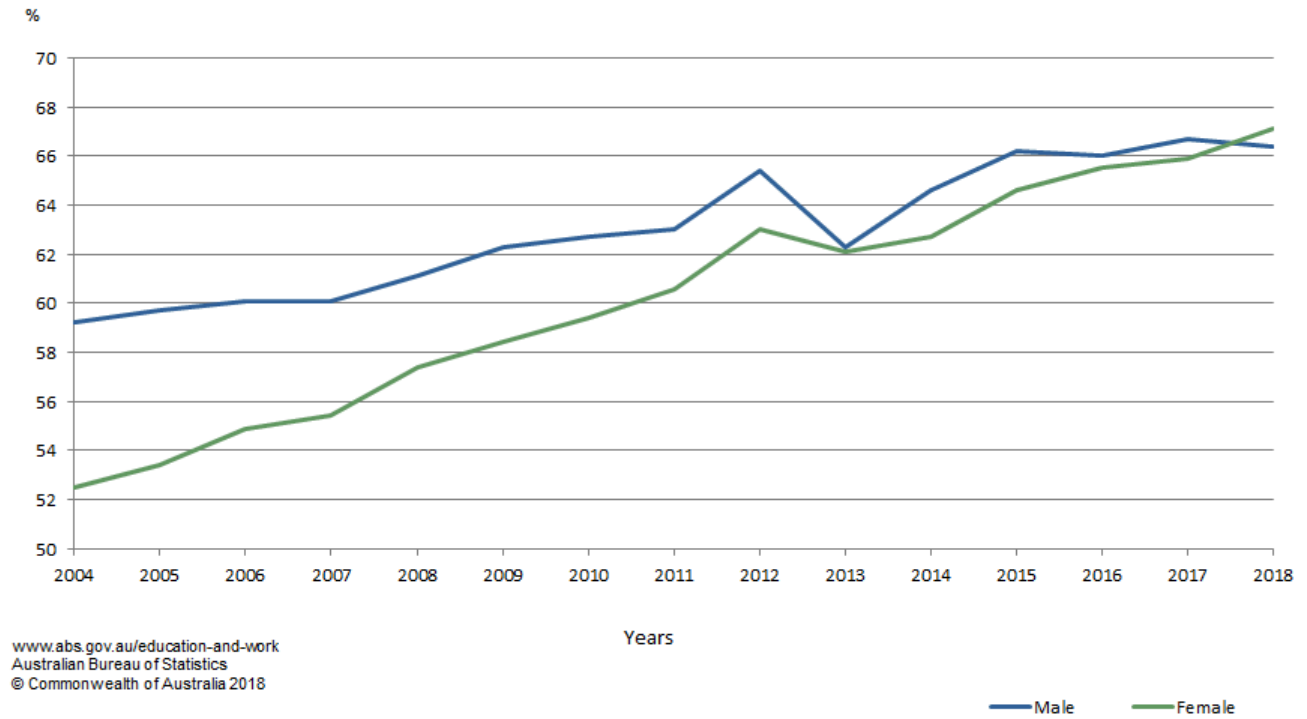
Graph 1 - Attainment of non-school qualification, by sex and age group, 2018



Source: *Education and Work, Australia, 2018*

Historically, males had a higher rate of attainment of non-school qualifications than females. Over the last 15 years the disparity between males and females has decreased and since 2016 they have been at about the same level. In 2018 females had a slightly higher rate of attainment but the difference is not statistically significant. (Table 24 and Graph 2)

Graph 2 - Persons aged 20 to 64 years, Attainment of non-school qualification, by sex, 2004-2018

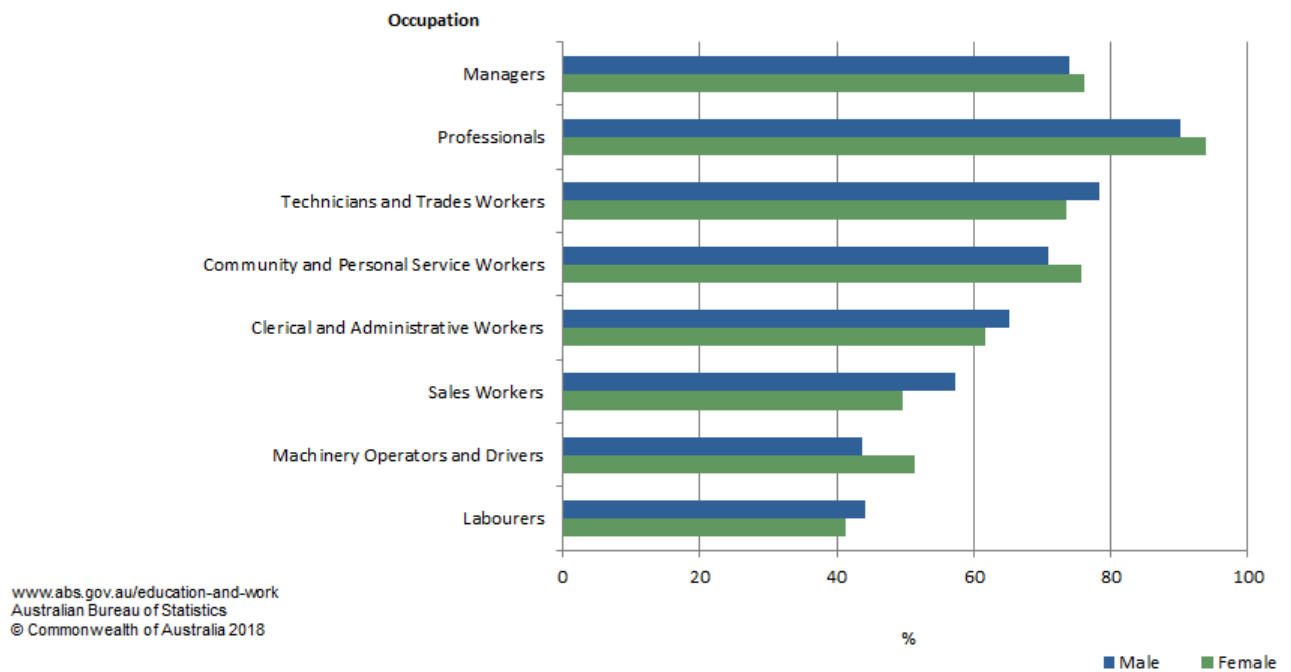


Source: *Education and Work, Australia, 2018*

Of people aged 20 to 64 years who were employed, 71.4%, had attained a non-school qualification, compared with 58.0% of unemployed people and about half (49.9%) of people who were not in the labour force.

In some occupations, a larger proportion of males than females had attained a non-school qualification, including Sales Workers (57.3% compared with 49.6%) and Technicians and Trades Workers (78.4% compared with 73.5%). However, in the Professionals category, a larger proportion of females had attained a non-school qualification (93.8%) compared with males (90.1%). (Graph 3)

Graph 3 - Persons aged 20 to 64 years, Attainment of non-school qualification, by occupation of current job, by sex, 2018

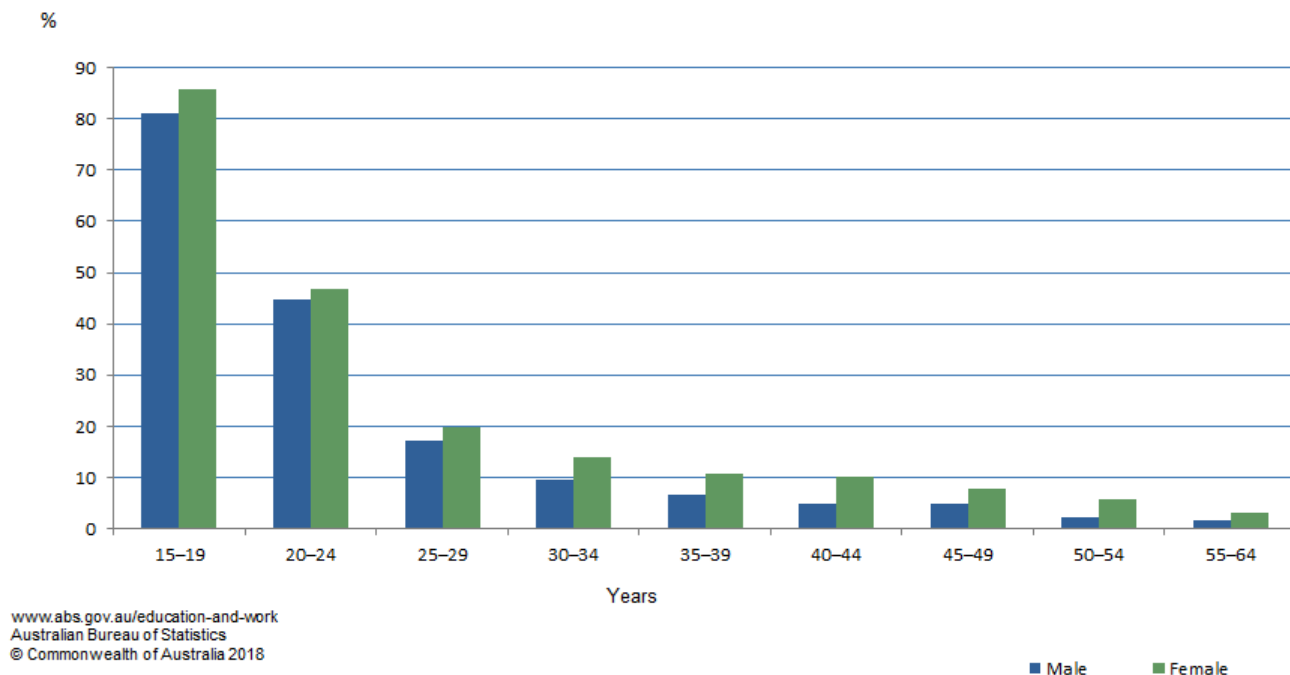


Source: *Education and Work, Australia, 2018*

PARTICIPATION IN FORMAL EDUCATION

In May 2018, of the estimated 16.2 million people aged 15 to 64 years in Australia, over 3 million, or nearly 1 in 5 (19.0%), were enrolled in formal study (including school study). The majority of 15 to 19 year olds (83.4%) were enrolled in formal study. This proportion declined sharply with age with 45.7% of those aged 20 to 24 years and 18.7% of those aged 25 to 29 years enrolled in formal study. Women had higher rates of participation across all age groups (Table 21 and Graph 4).

Graph 4 - Persons currently enrolled in formal study, by sex and age group, 2018



Source: *Education and Work, Australia, 2018*

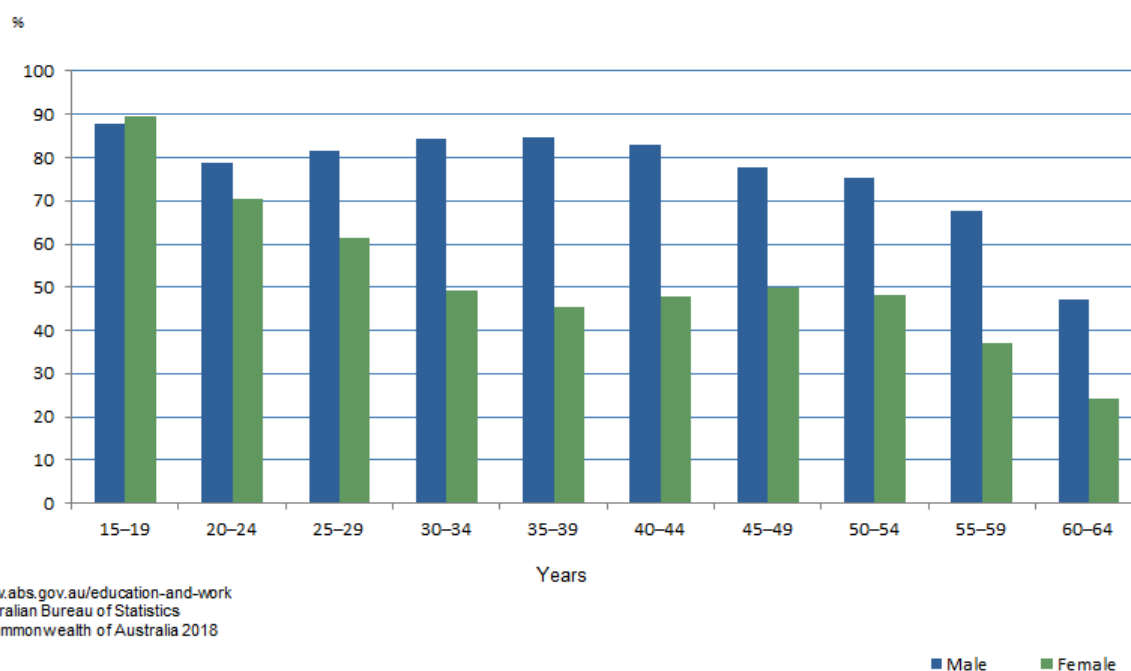
TRANSITION TO FURTHER STUDY AND/OR EMPLOYMENT FOR 2017 SCHOOL LEAVERS

There were 302,400 people aged 15 to 20 years who were enrolled in secondary school in 2017 but not in May 2018. Of these school leavers, 77.6% had completed Year 12 or equivalent and 62.5% were currently enrolled in study at a non-school institution. The proportion of school leavers who were not studying was 37.6% and of these, the majority were employed, either full-time (29.4%) or part-time (34.0%), while 35.7% were not employed. (Table 17)

ENGAGEMENT IN EMPLOYMENT AND EDUCATION

In May 2018, there were 10.5 million (64.9%) people aged 15 to 64 years who were fully engaged in employment or study. Of those aged 15 to 24 years, 81.1% were fully engaged, 9.9% were partially engaged and 9.0% were not engaged. The number of men and women aged 15 to 19 years who were fully engaged in work or study was similar in 2018, however more men were fully engaged for all age groups above 15 to 19 years. (Table 32 and Graph 5)

Graph 5 - Fully engaged in employment or study, by sex and age group, 2018

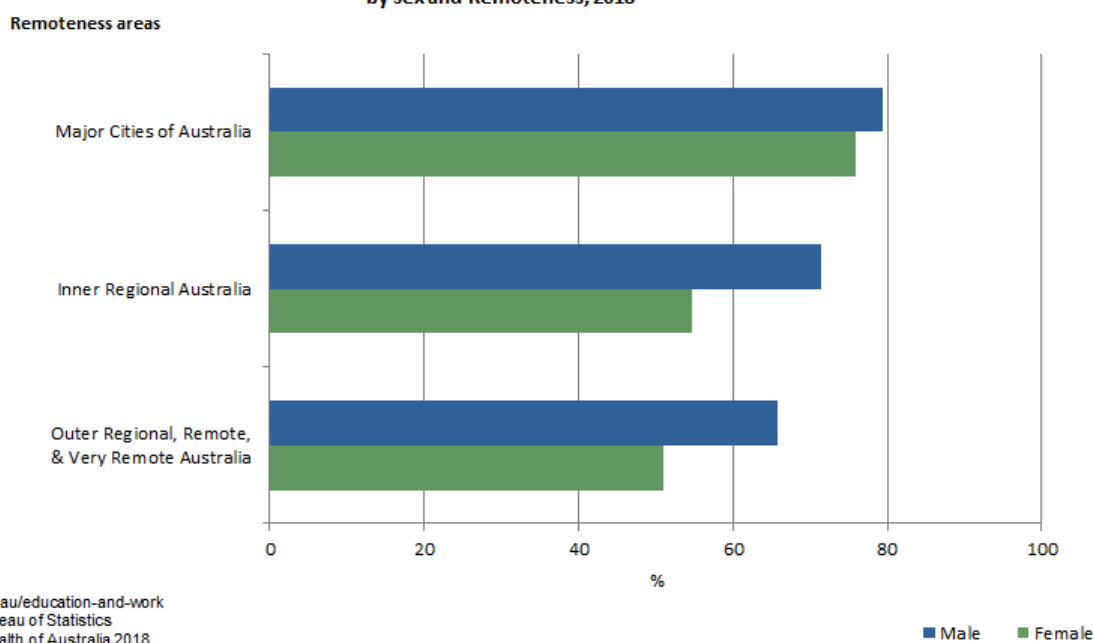


Source: *Education and Work, Australia, 2018*

The proportion of fully engaged men and women aged 15 to 24 years, who are not studying at school, decreases as the level of remoteness increases. (Table 34)

More than three-quarters of men in Major Cities (79.3%) were fully engaged in work or study in 2018 compared with 71.3% in Inner Regional areas and 65.7% in Outer Regional/Remote and Very Remote areas. The rates for women were 75.9%, 54.8% and 51.0% respectively. (Graph 6)

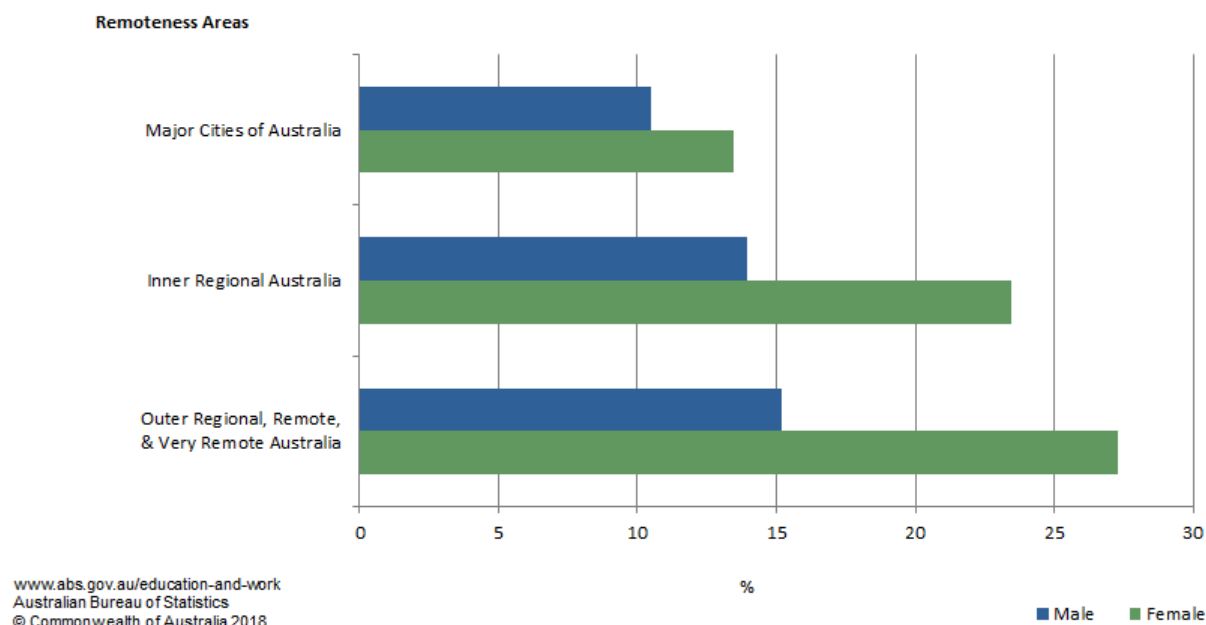
Graph 6 - Persons aged 15 to 24 years excluding school students, Fully engaged in employment or study, by sex and Remoteness, 2018



Source: *Education and Work, Australia, 2018*

However, women had higher rates of being partially engaged than men and this increases as the area becomes more remote (13.4% in Major Cities, 23.4% in Inner Regional areas and 27.3% in Outer Regional/Remote and Very Remote areas). The rates for men were 10.5%, 13.9% and 15.2% respectively. (Graph 7)

Graph 7 - Persons aged 15 to 24 years excluding school students, Partially engaged in employment or study, by sex and Remoteness, 2018



Source: *Education and Work, Australia, 2018*

CURRENT APPRENTICES AND TRAINEES

In May 2018, there were 196,100 people aged 15 to 64 years who were employed as apprentices or trainees and were part of the Australian Apprenticeship Scheme. Of these, 98,600 people (50.3%) had commenced their apprenticeship or traineeship in the last 12 months. The majority of apprentices or trainees were male (84.0% compared with 16.0%). Of those employed as apprentices and trainees, nearly two-thirds (63.0%) are located in Capital Cities. As in previous years, construction was the most common industry for apprentices and trainees, with 44.1% employed in this industry. (Table 19)

Key concepts

KEY CONCEPTS

AUSTRALIAN STANDARD CLASSIFICATION OF EDUCATION (ASCED)

Education data are coded to the Australian Standard Classification of Education, 2001 (cat. no. 1272.0). The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education. The ASCED comprises two classifications: *Level of Education* and *Field of Education*.

Level of Education is defined as a function of the quality and quantity of learning involved in an educational activity. There are nine broad levels, 15 narrow levels and 64 detailed levels.

Field of Education is defined as the subject matter of an educational activity. Fields of education are related to each other through the similarity of subject matter, through the broad purpose for which the education is undertaken, and through the theoretical content which underpins the subject matter. There are 12 broad fields, 71 narrow fields and 356 detailed fields.

For definitions of these fields see the Australian Standard Classification of Education, 2001 (cat. no. 1272.0).

LEVEL OF EDUCATION OF CURRENT STUDY

Since 2014, persons who are identified in the Labour Force Survey as currently studying a school level qualification were asked in SEW whether they are currently studying for any non-school qualifications. If the respondent was still attending school, their level of study was recorded as their current year of schooling, not their non-school qualification.

LEVEL OF HIGHEST EDUCATION ATTAINMENT

Level of highest educational attainment identifies the highest achievement a person has attained in any area of formal study. Level of highest educational attainment was derived from information on highest year of school completed and level of highest non-school qualification. The derivation process determines which of the 'non-school' or 'school' attainments will be regarded as the highest. Usually the higher ranking attainment is self-evident, but in some cases some secondary education is regarded, for the purposes of obtaining a single measure, as higher than some certificate level attainments.

There are two types of measures used in this publication, 'Non-School Priority' and 'Standard Education Priority'.

Non-School Priority

Non-school priority is where all non-school qualifications are considered of higher ranking than secondary education. For example, a person whose highest year of school completed was Year 12, and whose level of highest non-school qualification was a Certificate I, would have their level of highest education attainment output as Certificate I. This concept is used in Table 10 of this publication.

Standard Education Priority

Standard Education Priority is where some school qualifications are ranked higher than some non-school qualifications. For example, years 10, 11 and 12 are ranked higher than Certificates I, II and n.f.d. The Standard Education Priority was designed for the purpose of obtaining a single value for level of highest educational attainment and is not intended to convey any other hierarchy.

The following decision table shows which of the responses to questions on highest year of school completed (coded to ASCED Broad Level 6) and level of highest non-school qualification (coded to ASCED Broad Level 5) is regarded as the highest. For example, a person whose highest year of school completed was Year 12, and whose level of highest non-school qualification was a Certificate III, would have their level of highest educational attainment output as Certificate III. However, if the same person answered 'certificate' to the highest non-school qualification question, their level of highest educational attainment would be output as Level not determined.

DECISION TABLE: LEVEL OF HIGHEST EDUCATIONAL ATTAINMENT

Highest year of school completed	Level of highest non-school qualification							Inadequately described L.n.d.	Not Stated
	Cert IV	Cert III	Cert III & IV n.f.d.	Cert II	Cert I	Cert I & II n.f.d.	Cert n.f.d.		
Year 12	Cert IV	Cert III	Cert III & IV n.f.d.	Year 12	Year 12	Year 12	L.n.d.	L.n.d.	N.S.
Year 11	Cert IV	Cert III	Cert III & IV n.f.d.	Year 11	Year 11	Year 11	L.n.d.	L.n.d.	N.S.
Senior Sec. Education n.f.d.	Cert IV	Cert III	Cert III & IV n.f.d.	Senior Sec. n.f.d.	Senior Sec. n.f.d.	Senior Sec. n.f.d.	L.n.d.	L.n.d.	N.S.
Year 10	Cert IV	Cert III	Cert III & IV n.f.d.	Year 10	Year 10	Year 10	L.n.d.	L.n.d.	N.S.
Year 9 and below	Cert IV	Cert III	Cert III & IV n.f.d.	Cert II	Cert I	Cert I & II n.f.d.	Cert n.f.d.	L.n.d.	N.S.
Sec. Education n.f.d.	Cert IV	Cert III	Cert III & IV n.f.d.	L.n.d.	L.n.d.	L.n.d.	L.n.d.	L.n.d.	N.S.
Junior Sec. Education n.f.d.	Cert IV	Cert III	Cert III & IV n.f.d.	L.n.d.	L.n.d.	L.n.d.	L.n.d.	L.n.d.	N.S.
Not stated	Cert IV	Cert III	Cert III & IV n.f.d.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Never attended school	Cert IV	Cert III	Cert III & IV n.f.d.	Cert II	Cert I	Cert I & II n.f.d.	Cert n.f.d.	L.n.d.	N.S.

Cert = Certificate
L.n.d. = Level not determined
n.f.d. = not further defined
N.S. = Not Stated
Sec. = Secondary

For ease of interpretability, the layout of this table has been modified from last year and from Education Variables, June 2014 (cat. no. 1246.0) however the ranking of different levels of attainment has not changed.

Engagement in Employment and Education

The term engagement is used when assessing a person's level of participation in employment and education. The following table describes the different scenarios by which people can be 'Fully engaged', 'Partially engaged', or 'Not engaged'.

Employment Status	Education Status		
	Full-time study	Part-time study	Not Studying
Full-time employment	Fully engaged	Fully engaged	Fully engaged
Part-time employment	Fully engaged	Fully engaged	Partially engaged
Unemployed looking for full-time work	Fully engaged	Partially engaged	Not engaged
Unemployed looking for part-time work	Fully engaged	Partially engaged	Not engaged
Not in the labour force	Fully engaged	Partially engaged	Not engaged

Microdata Access

MICRODATA ACCESS

Microdata can be used by approved users to produce customised tables and analysis from the survey data. Microdata products are designed to ensure the integrity of the data whilst maintaining the confidentiality of the respondents to the survey.

Microdata Education and Work (cat. no. 6227.0.30.001) provides information about the microdata available from the Survey of Education and Work. More information can be found at [How to Apply for Microdata](#).

About this Release

Provides selected information on participation in education, highest educational attainment, transition from education to work and current labour force and demographic characteristics for the civilian population aged 15-74 years. Characteristics reported on include: type of educational institution attended or attending; level and main field of education of current study and highest level and main field of educational attainment.

Information on unsuccessful enrolment, and deferment of study, is included for persons not studying in the survey year. Data on apprenticeships are also provided.

Some of the statistical tables are presented in time series format. This product includes Data Cubes in spreadsheet format only.

History of changes

This document was added or updated on 11/09/2019.

11/09/2019 Table 34 has been updated and now contains data for the years 2004 to 2018.

Explanatory Notes

Explanatory Notes

EXPLANATORY NOTES

INTRODUCTION

1 This publication contains results from the 2018 Survey of Education and Work (SEW) conducted throughout Australia in May 2018 as a supplement to the monthly Labour Force Survey (LFS). Respondents to the LFS who were in scope of the supplementary survey were asked further questions about education.

2 The SEW provides annual information on a range of key indicators of educational participation and attainment of persons aged 15-74 years, along with data on people's transition between education and work. The annual time series allows for ongoing monitoring of the level of education of Australia's population including participation in current and previous study; type of educational institution attended; highest year of school completed; level and field of highest non-school qualification; characteristics of people's transition between education and work; and selected characteristics of apprentices and trainees.

3 The publication Labour Force, Australia (cat. no. 6202.0) contains information about survey design, sample redesign, scope, coverage and population benchmarks relevant to the monthly LFS, which also apply to supplementary surveys. It also contains definitions of demographic and labour force characteristics.

CONCEPTS, SOURCES AND METHODS

4 The conceptual framework used in Australia's LFS aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling these estimates, are presented in Labour Statistics: Concepts, Sources and Methods, Feb 2018 (cat. no. 6102.0.55.001).

5 In July 2014, the LFS survey questionnaire underwent a number of developments. For further information see Information

SCOPE AND COVERAGE

Scope

6 The scope of the SEW is restricted to persons aged 15-74 years who were usual residents of private dwellings and non-institutionalised special dwellings excluding:

- members of the permanent defence forces;
- certain diplomatic personnel of overseas governments, customarily excluded from the Census of Population and Housing and estimated resident populations;
- overseas residents in Australia;
- members of non-Australian defence forces (and their dependants);
- institutionalised persons (e.g. patients in hospitals, residents of retirement homes, residents of homes for persons with disabilities, inmates of prisons);
- Indigenous communities; and
- boarding school pupils.

7 Boarding school pupils have been excluded from the scope of the SEW since 2005, but were included in earlier collections.

8 SEW excludes people living in Indigenous Communities. Since 2009, SEW has included people living in 'very remote' areas who are not in Indigenous Communities. Prior to SEW 2009, all persons living in 'very remote' parts of Australia were excluded. Nationally, less than 1% of persons in scope of SEW live in 'very remote' areas that are not Indigenous Communities. In the Northern Territory, this proportion is higher, at around 8%.

9 In 2013, the scope of SEW was extended to include all persons aged 65-74 years for the first time. From 2009 to 2012, persons aged 65-74 years who were in the labour force, or were marginally attached to the labour force were included. Persons were determined to be marginally attached to the labour force if they were not in the labour force in the reference week, wanted to work and:

- were actively looking for work but did not meet the availability criteria to be classified as unemployed; or
- were not actively looking for work but were available to start work within four weeks or could start work within four weeks.

Prior to 2009 all persons aged 65-74 were excluded from the scope of SEW.

10 Persons who are permanently unable to work were included in the scope of SEW for the first time in 2013. There were an estimated 464,255 people who reported being permanently unable to work in May 2018.

Coverage

11 The estimates in this publication relate to persons covered by the survey scope. In the LFS, coverage rules are applied which aim to ensure that each person is associated with only one dwelling and hence has only one chance of selection in the survey. See Labour Force, Australia (cat. no. 6202.0) for more details.

SAMPLE SIZE

12 Approximately 92% of the selected households were fully responding to the Monthly Population survey, which resulted in 41,781 completed interviews.

DATA COLLECTION

13 Information was collected from respondents over a two week period in May 2018. The data were collected through interviews, conducted either face-to-face or over the telephone, or respondents were able to provide their information over the internet via a self-completed form.

14 The May 2013 SEW was the first supplementary survey to incorporate this online data collection method, where the option was offered to just over one-quarter of the SEW sample. The May 2014 SEW was the first time this option was offered to all respondents. In 2018, 31% of the total SEW sample took up the online option.

15 All information, either from interview or online self-completion, was obtained from any responsible adult in the household who was asked to respond on behalf of all persons in the household in scope of the survey.

ESTIMATION METHOD

Weighting

16 Weighting is the process of adjusting results from a sample survey to infer results for the total population. To do this, a 'weight' is allocated to each enumerated person. The weight is a value which indicates how many persons in the population are represented by the sample person.

17 The first step in calculating weights for each unit is to assign an initial weight, which is the inverse of the probability of the unit being selected in the survey. For example, if the probability of a person being selected in the survey was 1 in 300, then the person would have an initial weight of 300 (that is, they represent 300 people).

Population benchmarks

18 The initial weights are then calibrated to align with independent estimates of the population, referred to as benchmarks. The population included in the benchmarks is the survey scope. This calibration process ensures that the weighted data conform to the independently estimated distribution of the population described by the benchmarks rather than to the distribution within the sample itself. Calibration to population benchmarks helps to compensate for over or under-enumeration of particular categories of persons which may occur due to either the random nature of sampling or non-response.

19 The survey was benchmarked to the estimated resident population (ERP) aged 15-74 years living in private dwellings and non-institutionalised special dwellings in each state and territory. People living in Indigenous communities were excluded.

Estimation

20 Survey estimates of counts of persons are obtained by summing the weights of persons with the characteristics of interest.

21 To minimise the risk of identifying individuals in aggregate statistics, a technique is used to randomly adjust cell values. This technique is called perturbation. Perturbation involves small random adjustment of the statistics and is considered the most satisfactory technique for avoiding the release of identifiable statistics while maximising the range of information that can be released. These adjustments have a negligible impact on the underlying pattern of the statistics. After perturbation, a given published cell value will be consistent across all tables. For instance, the estimated number of persons in May 2018 aged 15-74 years remains 18,427.8 irrespective of perturbation. However, adding up cell values in Data Cubes to derive a total will not necessarily give the same result as published totals. The introduction of perturbation in publications ensures that these statistics are consistent with statistics released via services such as TableBuilder.

RELIABILITY OF THE ESTIMATES

22 All sample surveys are subject to error which can be broadly categorised as either: sampling error or non-sampling error. For more information refer to the Technical Note.

Seasonal factors

23 The estimates are based on information collected in the survey month, and due to seasonal factors they may not be representative of other months of the year.

DATA QUALITY

Interpretation of results

24 The method of obtaining information about all the persons in the household from any responsible adult is only used for collecting information on topics where other members of the household are likely to be able to answer the questions. If the responsible adult is unable to supply all of the details for another individual in the household, a personal interview is conducted with that particular individual.

DATA COMPARABILITY

Comparability of time series

25 Supplementary surveys are not always conducted on the full LFS sample. Since August 1994 the sample for supplementary surveys has been restricted to no more than seven-eighths of the LFS sample. Since it was introduced, this survey has been conducted on various proportional samples and therefore sampling errors associated with previous supplementary surveys may vary from the sampling error for this survey.

26 Since 2005, boarding school pupils have been excluded from the scope of the SEW, but were included in earlier collections. For more details, see the Scope section of these Explanatory Notes.

27 Since 2007, industry data in the SEW have been classified according to the Australian and New Zealand Standard Industrial Classification, 2006 (cat. no. 1292.0) and prior to this, were classified according to the Australian and New Zealand Standard Industrial Classification, 1993 (cat. no. 1292.0). Therefore, industry data from SEW prior to 2007 are not directly comparable to data for 2007 and subsequent years.

28 Since 2007, occupation data in the SEW have been classified according to the Australian and New Zealand Standard Classifications of Occupations, First Edition, Revision 1 (cat. no. 1220.0) and prior to this, were classified according to the Australia Standard Classifications of Occupations, Second Edition, 1997 (cat. no. 1220.0). Occupation data are not directly comparable between these two editions of the classification. Therefore, occupation data from SEW prior to 2007 are not directly comparable to 2007 and subsequent years.

29 Prior to 2008, only persons aged 15-54 years were included in the apprenticeship/traineeship survey questions. In 2008, the age scope was extended to include persons aged 55-64 years and in 2009, the scope was further extended to include persons aged 65-74 years for these questions. In 2008, the definition for apprentices and trainees changed from those employed as apprentices/trainees to include only those with a formal contract under the **Australian Apprenticeships** scheme. Therefore data on apprentices from previous years are not directly comparable to 2008 and subsequent data.

30 Revisions were made to the in-scope population in 2013. All respondents aged 65-74 years were included for the first time, rather than just those in the labour force or marginally attached to the labour force. Persons who were permanently unable to work were also included.

31 Revisions are made to population benchmarks for the LFS after each five-yearly Census of Population and Housing. The last such revision was made in January 2014 to take account of the results of the 2011 **Census of Population and Housing**. Estimates from supplementary surveys conducted from and including 2014 are therefore based on these 2011 population benchmarks.

32 Since 2014, persons who are identified in the Labour Force Survey as currently studying a school level qualification were asked in SEW whether they are currently studying for any non-school qualifications. If the respondent was still attending school, their level of study was recorded as their current year of schooling, not their non-school qualification.

33 After each Census, population estimates are normally revised back five years to the previous Census year. As announced in the June 2012 issue of Australian Demographic Statistics (cat. no. 3101.0), intercensal error between the 2006 and 2011 Censuses was larger than normal due to improved methodologies used in the 2011 Census Post Enumeration Survey. The intercensal error analysis indicated that previous population estimates for the base Census years were over-counted. An indicative estimate of the size of the over-count is that there should have been 240,000 fewer people at June 2006, 130,000 fewer in 2001 and 70,000 fewer in 1996. As a result, Estimated Resident Population estimates have been revised for the last 20 years rather than the usual five. Consequently, estimates of particular populations derived since SEW 2014 may be lower than those published for previous years as the SEW estimates have not been revised. Therefore, comparisons of SEW estimates since 2014 with previous years should not be made. However, for comparable data items, comparison of rates or proportions between years is appropriate.

34 Since 2014, data in the SEW has been randomly adjusted to avoid the release of confidential statistics. Discrepancies may occur between sums of the component items and totals. See point 21 for more information on perturbation.

Changes made to 2018 publication tables

35 For changes, please refer to 'Table title concordance and changes - SEW 2018 to 2017' in the Downloads tab.

Comparability with other ABS surveys

36 Since the SEW is conducted as a supplement to the LFS, data items collected in the LFS are also available in SEW. However, there are some important differences between the two surveys. The SEW sample is a subset of the LFS sample (see the Introduction of these Explanatory Notes) and has a response rate which is slightly lower than the LFS response rate for the same period. Also, the scope of the SEW differs slightly to the scope of the LFS (refer to the Scope section above). Due to these differences between the samples, the SEW data are weighted as a separate process to the weighting of LFS data.

37 Differences may therefore be found in the estimates collected in the LFS and published as part of the SEW, when compared with estimates published in the May 2018 issue of Labour Force, Australia (cat. no. 6202.0). From September 2016, the ABS has published education data from the LFS as part of the Labour Force publication Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003). For more information on the differences between SEW and LFS in relation to education data items see the Fact Sheet: Expanded education data from the Labour Force Survey (in cat. no. 6291.0.55.003)

38 Additionally, estimates from the SEW may differ from the estimates produced from other ABS collections, for several reasons. The SEW is a sample survey and its results are subject to sampling error. Results may differ from other sample surveys, which are also subject to sampling error. Users should take account of the relative standard errors (RSEs) on estimates and those of other survey estimates where comparisons are made.

39 Differences may also exist in the scope and/or coverage of the SEW compared to other surveys. Differences in estimates, when compared to the estimates of other surveys, may result from different reference periods reflecting seasonal

variations, non-seasonal events that may have impacted on one period but not another, or because of underlying trends in the phenomena being measured.

40 Finally, differences can occur as a result of using different collection methodologies. This is often evident in comparisons of similar data items reported from different ABS collections where, after taking account of definition and scope differences and sampling error, residual differences remain. These differences are often the result of the mode of the collections, such as whether data are collected by an interviewer or self-enumerated by the respondent and whether the data are collected from the person themselves or from a proxy respondent. Differences may also result from the context in which questions are asked, i.e. where in the interview the questions are asked and the nature of preceding questions. The impacts on data of different collection methodologies are difficult to quantify. As a result, every effort is made to minimise such differences.

PRODUCTS AND SERVICES

41 A number of data cubes (spreadsheets) containing all tables produced for this publication are available from the Downloads tab of the publication. The data cubes present tables of estimates and proportions, and their associated measures of error.

42 For users who wish to undertake more detailed analysis of the data, the survey microdata will be released through the TableBuilder product. For more details, refer to the TableBuilder information, Microdata: Education and Work, Australia (cat. no. 6227.0.30.001).

43 Custom statistical tables incorporating data items, populations and geographic areas selected to meet individual requirements can be produced on request. Custom statistical tables are subject to confidentiality and sampling variability constraints which may limit what can be provided. Enquiries on the information available and the cost of these services should be made to the National Information and Referral Service on 1300 135 070.

ACKNOWLEDGMENTS

44 ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the **Census and Statistics Act 1905**.

PREVIOUS SURVEYS

45 Results of similar surveys have been published in previous issues. These surveys were conducted annually from February 1964 to February 1974, in May 1975 and 1976, in August 1977 and 1978, and annually in May since 1979. Results of previous surveys were published in Transition from Education to Work, Australia (cat. no. 6227.0) from 1964 to 2000. Since May 2001, the results of the survey have been published in Education and Work, Australia (cat. no. 6227.0).

NEXT SURVEY

46 The ABS intends to conduct this survey again in May 2019.

RELATED PUBLICATIONS

47 Refer to the Related Information tab for other ABS publications which may be of interest.

48 Current publications and other products released by the ABS are available from the ABS website. The ABS also issues a daily upcoming release advice on the website that details products to be released in the week ahead.

Glossary

GLOSSARY

Apprentice

An apprentice is a person who has entered into a legal contract (called a training agreement or contract of training) with an employer, to serve a period of training for the purpose of attaining tradesperson status in a recognised trade. In this survey, persons who are apprentices and trainees are identified by their answer to a question specifically pertaining to a contract under the Australian Apprenticeships scheme.

Balance of state/territory

Comprises the balance of each state/territory not included in Capital City. See Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2011 (cat. no. 1270.0.55.001).

Capital city

Refers to Greater Capital City Statistical Areas (GCCSA) as defined by the ASGS. The GCCSAs represent the socio-economic extent of each of the eight State and Territory capital cities. The whole of the ACT is included in the GCCSA.

Certificate n.f.d. (Certificate not further defined)

Survey responses are coded to Certificate not further defined (n.f.d.) when there is not enough information to code them to Certificate I, II, III or IV in the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0), Level of education classification.

Completed

'Completed' a qualification means having successfully passed all of the requirements for the qualification.

Country of birth

Country of birth has been classified according to the Standard Australian Classification of Countries (SACC), Second Edition (cat. no. 1269.0).

Currently enrolled in study

Enrolled in a course of formal study for a trade certificate, diploma, degree or any other educational qualification, in May of the survey year.

Dependent child

Persons aged less than 15 years who have a parent/guardian in the household.

Educational institution

Any institution whose primary role is education. Included are schools, higher education establishments, colleges of technical and further education and public and private colleges.

Employed

Persons who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees, employers and own account workers); or
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers); or
- were employees who had a job but were not at work and were:
 - away from work for less than four weeks up to the end of the reference week; or
 - away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week; or
 - away from work as a standard work or shift arrangement; or
 - on strike or locked out; or
 - on workers' compensation and expected to return to their job; or
- were employers or own account workers who had a job, business or farm, but were not at work.

Employed full-time

Employed persons who usually worked 35 hours or more a week (in all jobs) and those who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.

Employed part-time

Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.

Engagement

The term engagement is used when assessing a persons level of participation in employment and education. People can be Fully engaged, Partially engaged, or Not engaged. For more information, see the Key Concepts page.

Enrolled

Refers to persons registered for a course of formal study in the particular reference period (e.g. survey month, or previous calendar year).

Field not determined

Field not determined includes inadequately described responses or where no responses were given.

Field of trade

Refers to the occupation of an apprentice or trainee and is classified according to the Australian and New Zealand Standard Classification of Occupations (ANZSCO), First Edition, Revision 1 (cat. no. 1220.0) Unit Group.

Formal study

Any study being undertaken that will lead to a recognised qualification, issued by a relevant approved body, in recognition that a person has achieved learning outcomes or competencies relevant to identified individual, professional, industry or community needs. This includes study for a school qualification. In this survey, if the respondent was still attending school their level of study was recorded as their current year of schooling. If the respondent had left school and was enrolled in formal study they were asked the level of the qualification.

Fully engaged

People who were employed full-time and/or in full-time study, or employed part-time combined with part-time study.

Higher education institution or organisation

An Australian institution providing higher education courses, e.g. universities; colleges of advanced education; institutes of advanced education; institutes of higher education; institutes of tertiary education; agricultural colleges; and some institutes of technology, and the equivalent institutions overseas.

Industry

Industry data is classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0).

Level of highest educational attainment

Level of highest educational attainment identifies the highest achievement a person has attained in any area of formal study. It is not a measurement of the relative importance of different fields of study, but a ranking of qualifications and other educational attainments regardless of the particular area of study or the type of institution in which the study was undertaken. For more information regarding how Level of highest educational attainment is derived see the Decision Table: Level of Highest Educational Attainment in the Key Concepts page. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Level of education classification.

Level of highest educational attainment (non-school priority)

A person's level of highest educational attainment (non-school priority) is their highest non-school qualification where they have completed one. For persons who have not completed a non-school qualification their level of highest educational attainment (non-school priority) is the highest year of school they have completed. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Level of education classification.

Level of highest non-school qualification

A person's level of highest non-school qualification is the highest qualification a person has attained in any area of formal study other than school study. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Level of education classification.

Level not determined

Level not determined includes inadequately described responses or where no responses were given.

Main field of education

The main subject matter of the study undertaken by a person in completing an educational activity. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Field of education classification.

Non-school qualification

Non-school qualifications are awarded for educational attainments other than those of pre-primary, primary or secondary education. They include qualifications at the Postgraduate Degree level, Master Degree level, Graduate Diploma and Graduate Certificate level, Bachelor Degree level, Advanced Diploma and Diploma level, and Certificates I, II, III and IV levels. Non-school qualifications may be attained concurrently with school qualifications.

Not in labour force

Persons who were not in the categories 'employed' or 'unemployed'.

Not Engaged

People who were not employed and not studying.

Occupation

Occupation data is classified according to the ANZSCO - Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1 (cat. no. 1220.0).

Partially Engaged

People who were employed part-time and not studying, or in part-time study and not employed.

Qualification

Formal certification, issued by a relevant approved body, in recognition that a person has achieved an appropriate level of learning outcomes or competencies relevant to identified individual, professional, industry or community needs. Statements of attainment awarded for partial completion of a course of study at a particular level are excluded.

Remoteness

The Australian Statistical Geography Standard (ASGS) was used to define remoteness. The Remoteness Structure is described in detail in the publication Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure, July 2011 (cat. no. 1270.0.55.005).

Reference week

The week preceding the week in which the interview was conducted.

School-based apprenticeship or traineeship

School-based apprenticeships or traineeships are undertaken part-time while at school and combine paid employment as an apprentice or trainee, vocational training and senior secondary school studies. This is a different population to those people who are undertaking apprenticeships or traineeships through the Australian Apprenticeships scheme which are considered separately.

School study

School study is participation in primary or secondary level education, regardless of the institution or location where the study is or was undertaken. It therefore includes such study undertaken in a Technical and Further Education (TAFE) or other institution.

Socio-Economic Status (SEIFA-IRSD)

This is one of four Socio-Economic Indexes for Areas (SEIFAs) compiled by the ABS following each Census of Population and Housing, from various characteristics of persons resident in particular areas. The Index of Relative Socio-Economic Disadvantage summarises attributes such as income, educational attainment, unemployment and occupation skill levels. The index refers to the area (the Statistical Area Level 1) in which a person lives, not to the socio-economic situation of the particular individual. The index ranks areas on a continuum from most disadvantaged to least disadvantaged. A low score on the index (i.e. lowest quintile or decile) indicates a high proportion of relatively disadvantaged people in an area. Such areas include many households with low income, people with no qualifications and many people in low skill occupations. It should be noted that it cannot be concluded that an area with a very high score has a large proportion of relatively advantaged ('well off') people, as there are no variables in the index to indicate this. It can only be concluded that such an area has a relatively low incidence of disadvantage. The indexes used in this publication were those compiled following the 2011 Census. For further information about the indexes, see Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011 (cat. no. 2033.0.55.001).

TAFE

A Technical and Further Education institution. In Victoria this may also be interpreted as Training and Further Education.

Trainee

A trainee is a person who has entered into a legal contract (called a training agreement or contract of training) with an employer, to serve a period of training in a vocational area (e.g. office administration, information technology, hospitality). In this survey, persons who are apprentices and trainees are identified by their answer to a question specifically pertaining to a contract under the Australian Apprenticeships scheme.

Unemployed

Persons who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and were available for work in the reference week; or
- were waiting to start a new job within four weeks from the end of the reference week and could have started in the reference week if the job had been available then.

Vocational Education and Training (VET)

VET relates to education and training that aims to equip people with knowledge, skills and/or competences required in particular occupations or, more broadly, on the labour market. VET is a component of apprenticeships or traineeships, including those that are school-based. However, VET can be undertaken without also undertaking an apprenticeship or traineeship.

Abbreviations

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ABSCQ	Australian Bureau of Statistics Classification of Qualifications
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industrial Classification
ASCED	Australian Standard Classification of Education
ASGS	Australian Statistical Geography Standard
CURF	Confidentialised Unit Record File
GCCSA	Greater Capital City Statistical Areas
IRSD	Index of Relative Socio-Economic Disadvantage
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification of All Economic Activities
LFS	Labour Force Survey
MOE	Margin of Error
n.f.d.	not further defined
RSE	relative standard error
SA4	Statistical Area Level 4
SACC	Standard Australian Classification of Countries
SE	standard error
SEIFA	Socio-Economic Indexes for Areas
SEW	Survey of Education and Work
TAFE	Technical and Further Education
VET	Vocational Education and Training

Quality Declaration - Summary

QUALITY DECLARATION - SUMMARY

INSTITUTIONAL ENVIRONMENT

The Survey of Education and Work (SEW) is conducted in May each year throughout Australia as part of the Australian Bureau of Statistics (ABS) household survey program. For information on the institutional environment of the ABS, including its legislative obligations, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.

TableBuilder files are released in accordance with the conditions specified in the Statistics Determination section of the Census and Statistics Act 1905 (CSA). This ensures that confidentiality is maintained whilst enabling micro level data to be released. Microdata is released using methods and systems that protect the confidentiality people, households, and businesses. For more information about confidentiality, see the ABS Confidentiality Series and How ABS keeps your information confidential.

RELEVANCE

The SEW provides information for a range of key indicators relating to the educational participation and attainment of persons aged 15 to 74 years, along with data on their transition between education and work.

The type of information collected includes: general demographic and labour force characteristics; participation in education in the survey month and in the year prior to the survey; type of educational institution attended; level of education of current and previous study; level and main field of highest non-school qualification; transition from education to work; unmet demand for education; and selected characteristics of apprentices, including unmet demand for apprenticeships and traineeships.

The Australian Standard Classification of Education (ASCED) (cat. no. 1272.0) is used to classify the Level and Field of education. The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education.

As SEW is collected as a supplement to the Labour Force Survey (LFS), persons excluded from the LFS are also excluded from this survey (see Explanatory Notes in Labour Force, Australia (cat. no. 6202.0) for standard LFS exclusions). Additional exclusions from SEW are persons aged 75 years or older, institutionalised persons, boarding school pupils and persons in Indigenous Communities. Persons permanently unable to work and persons aged 65 to 74 years who are not intending to work, or not in the labour force, or not marginally attached to the labour force, were included for the first time in 2013.

TIMELINESS

The ABS has been conducting similar education and work surveys since 1964. These surveys were conducted annually, in February, from 1964 to 1974, in May 1975 and 1976, in August 1977 and 1978 and annually, in May, since 1979. Data from the survey are released approximately six months after they have been collected.

ACCURACY

The LFS is primarily designed to provide estimates for the whole of Australia and, secondly, for each state and territory. The LFS is based on a sample of private dwellings and non-private dwellings, such as hotels and motels. The number of completed interviews for the 2018 Survey of Education and Work (after taking into account scope and coverage exclusions) was 41,781. The sample size was achieved by obtaining a response rate of 92% from the Monthly Population Survey.

Two types of error are possible in an estimate based on a sample survey: non-sampling error and sampling error.

Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures.

Sampling error occurs because a sample, rather than the entire population, is surveyed. One measure of the likely difference resulting from not including all dwellings in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included in the survey and about 19 chances in 20 that the difference will be less than two standard errors. Relative standard errors (RSEs) of the estimates for this survey are included with this release.

Another measure is the Margin of Error (MOE), which describes the distance from the population value of the estimate at a given confidence level, and is specified at a given level of confidence. Confidence levels typically used are 90%, 95% and 99%. For example, at the 95% confidence level the MOE indicates that there are about 19 chances in 20 that the estimate will differ by less than the specified MOE from the population value (the figure obtained if all dwellings had been enumerated). The MOEs in this publication are calculated at the 95% confidence level.

COHERENCE

The ABS seeks to maximise consistency and comparability over time by minimising changes to its surveys. However, sound survey practice requires ongoing development and maintenance to maintain the integrity of the data and the efficiency of collection.

After each Census, population estimates are normally revised back five years to the previous Census year. As announced in the June 2012 issue of Australian Demographic Statistics (cat. no. 3101.0), intercensal error between the 2006 and 2011 Censuses was larger than normal due to improved methodologies used in the 2011 Census Post Enumeration Survey. The intercensal error analysis indicated that previous population estimates for the base Census years were over-counted. An indicative estimate of the size of the over-count is that there should have been 240,000 fewer people at June 2006, 130,000 fewer in 2001 and 70,000 fewer in 1996. As a result, Estimated Resident Population estimates have been revised for the last 20 years rather than the usual five.

Consequently, estimates of particular populations derived since SEW 2014 may be lower than those published for previous years as the SEW estimates have not been revised. Therefore, comparisons of SEW estimates since 2014 with previous years should not be made. However, for comparable data items, comparison of rates or proportions between years is appropriate.

The May 2013 SEW was the first supplementary survey to incorporate an online data collection method, where the option was offered to just over one-quarter of the SEW sample. Since the May 2014 SEW this option has been offered to all respondents. For more information see the article [Transition to Online Collection of the Labour Force Survey](#).

For changes between iterations of the SEW, please refer to the Explanatory Notes. For a full list of changes made to the LFS, see the Labour force comparability over time chapter of *Labour Statistics: Concepts, Sources and Methods*, Feb 2018 (cat. no. 6102.0.55.001) and Information Paper: *Forthcoming Changes to Labour Force Statistics*, Aug 2015 (cat. no. 6292.0).

INTERPRETABILITY

Detailed information on the terminology, classifications and other technical aspects associated with the SEW can be found in the relevant web pages included with this release.

ACCESSIBILITY

Tabulated data and associated measures of error are available in spreadsheet format and can be accessed from the Downloads tab.

Data from this survey will also be accessible in the TableBuilder environment, enabling users to create their own customised output as required. For further details, refer to the Microdata Entry Page on the ABS website.

Data are also available on request. Note that detailed data can be subject to high measures of error which in some cases may result in data being confidentialised.

For further information about these or related statistics, contact the National Information and Referral Service on 1300 135 070, or email client.services@abs.gov.au.

The ABS Privacy Policy outlines how the ABS will handle any personal information that you provide to us.

Data quality (Technical Note)

TECHNICAL NOTE

RELIABILITY OF THE ESTIMATES

1 The estimates in this publication are based on information obtained from a sample survey. Any data collection may encounter factors, known as non-sampling error, which can impact on the reliability of the resulting statistics. In addition, the reliability of estimates based on sample surveys are also subject to sampling variability. That is, the estimates may differ from those that would have been produced had all persons in the population been included in the survey.

NON-SAMPLING ERROR

2 Non-sampling error may occur in any collection, whether it is based on a sample or a full count such as a census. Sources of non-sampling error include non-response, errors in reporting by respondents or recording of answers by interviewers and errors in coding and processing data. Every effort is made to reduce non-sampling error by careful design and testing of questionnaires, training and supervision of interviewers, and extensive editing and quality control procedures at all stages of data processing.

SAMPLING ERROR

3 Sampling error is the difference between the published estimates, derived from a sample of persons, and the value that would have been produced if the total population (as defined by the scope of the survey) had been included in the survey. One measure of the sampling error is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of persons was included. There are about two chances in three (67%) that a sample estimate will differ by less than one SE from the number that would have been obtained if all persons had been surveyed, and about 19 chances in 20 (95%) that the difference will be less than two SEs.

4 Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

$$RSE\% = \left(\frac{SE}{estimate} \right) \times 100$$

5 RSEs for count estimates have been calculated using the Jackknife method of variance estimation. This involves the calculation of 30 'replicate' estimates based on 30 different subsamples of the obtained sample. The variability of estimates

obtained from these subsamples is used to estimate the sample variability surrounding the count estimate.

Margin of error and Confidence Intervals

8 Another useful measure is the margin of error (MOE), which shows the largest possible difference (due to sampling error) that could exist between the estimate and what would have been produced had all persons been included in the survey, at a given level of confidence. It is useful for understanding and comparing the accuracy of proportion estimates. Confidence levels can vary (e.g. typically 90%, 95% or 99%), but in this publication, all MOEs are provided for estimates at the 95% confidence level. At this level, there are 19 chances in 20 that the estimate will differ from the population value by less than the provided MOE. The 95% MOE is obtained by multiplying the SE by 1.96.

$$MOE = SE \times 1.96$$

9 The estimate combined with the MOE defines a range, known as a confidence interval. This range is likely to include the true population value with a given level of confidence. A confidence interval is calculated by taking the estimate plus or minus the MOE of that estimate. It is important to consider this range when using the estimates to make assertions about the population or to inform decisions. Because MOEs in this publication are provided at the 95% confidence level, a 95% confidence interval can be calculated around the estimate, as follows:

$$95\% \text{ Confidence Interval} = (\text{estimate} - MOE, \text{estimate} + MOE)$$

USING THE MEASURES OF SAMPLING ERROR WITH THE ESTIMATES

10 This publication reports the relative standard error (RSE) for estimates of counts ('000) and the margin of error (MOE) for estimates of proportions (%). These measures are included in the datacubes available on the Downloads tab. In the first datacube (Tables 1-20: Education and Work), time series tables include both RSE of proportion and MOE of proportion, as do tables 21- 34. For years prior to 2018, MOE of proportion has been calculated using rounded figures and the result may have slightly less precision than the MOE of proportion calculated for 2018.

11 In the first datacube (Tables 1-20: Education and Work), estimates of proportions with a MOE greater than 10% are annotated to indicate they are subject to high sample variability and particular consideration should be given to the MOE when using these estimates. Depending on how the estimate is to be used, a MOE of greater than 10% may be considered too large to inform decisions. In addition, estimates with a corresponding standard 95% confidence interval that includes 0% or 100% are annotated to indicate they are usually considered unreliable for most purposes. In the remainder of the datacubes, estimates of proportions with high RSEs are annotated. The exception is 2017, where estimates of proportions are annotated based on the size of their MOE.

12 Only estimates with RSEs less than 25% are considered sufficiently reliable for most analytical purposes. All other estimates with RSEs between 25% and 50% are annotated to indicate they are subject to high sample variability relative to the size of the estimate and should be used with caution. In addition, estimates with RSEs greater than 50% are annotated to indicate they are usually considered unreliable for most purposes.

13 Caution needs to be applied when performing statistical tests for estimates on rare populations where the RSE is above 25%. In these instances, the small sample is more vulnerable to non-sampling error and the distribution of the sampling error is not symmetric around the estimate.

CALCULATING MEASURES OF ERROR AND DIFFERENCE

14 Proportions or percentages formed from the ratio of two count estimates are also subject to sampling errors. The size of the error depends on the accuracy of both the numerator and the denominator. A formula to approximate the RSE of a proportion is given below. This formula is only valid when the numerator (x) is a subset of the denominator (y):

$$RSE \left(\frac{x}{y} \right) \approx \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

15 When calculating measures of error, it may be useful to convert RSE or MOE to SE. This allows the use of standard formulas involving the SE. The SE can be obtained from RSE or MOE using the following formulas:

$$SE = \frac{RSE\% \times \text{estimate}}{100}$$

$$SE = \frac{MOE}{1.96}$$

16 The RSE can also be used to directly calculate a MOE with a 95% confidence level:

$$MOE = \frac{RSE\% \times \text{estimate} \times 1.96}{100}$$

Differences

17 The difference between two survey estimates (counts or percentages) can also be calculated from published estimates. Such an estimate is also subject to sampling error. The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates ($x - y$) may be calculated by the following formula:

$$SE(x - y) \approx \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

18 While this formula will only be exact for differences between separate and uncorrelated characteristics or sub populations, it provides a good approximation for the differences likely to be of interest in this publication.

Significance testing

19 A statistical significance test for a comparison between estimates can be performed to determine whether it is likely that there is a difference between the corresponding population characteristics. The approximate standard error of the difference between two corresponding estimates ($x - y$) can be calculated using the formula shown above in the Differences section. The standard error is then used to calculate the following test statistic:

$$\frac{|x - y|}{SE(x - y)}$$

20 If the value of this test statistic is greater than 1.96 then there is evidence, with a 95% level of confidence, of a statistically significant difference in the two populations with respect to that characteristic. Otherwise, it cannot be stated with confidence that there is a real difference between the populations with respect to that characteristic.